AMENDMENTS TO THE CLAIMS

Claim 1. (Currently amended): A method of detecting two or more target analytes in a sample, said method comprising:

i) providing a channel having affixed therein a first binding partner specific for a first analyte and a second binding partner specific for a second analyte, wherein said first binding partner and said second binding partner are specific for different analytes and, said first binding partner and said second binding partner are located in different regions of said channel, and attached to a wall of said channel, and said channel has a cross-sectional area small enough such that when analytes are released from said first binding partner and said second binding partner into a fluid flowing through said channel, said analytes remain spatially segregated until they reach a detection point in said channel downstream from said binding partners;

ii) passing a fluid comprising said sample through said channel under conditions where said target analytes present in said sample bind to their respective binding partners thereby spatially encoding said analytes in said channel;

iii) releasing said analytes from the binding partners into said fluid passing along said channel whereby said analytes are spatially segregated; and

iv) detecting said analytes at a position in said channel downstream from the binding partners.

Claim 2 (Original): The method of claim 1, wherein said analytes are not labeled.

Claim 3 (Original): The method of claim 1, wherein said channel is a capillary tube.

Claim 4 (Original): The method of claim 3, wherein said capillary tube is a capillary electrophoresis tube.

Claim 5 (Original): The method of claim 1, wherein said channel is a channel etched in a surface.

Claim 6 (Original): The method of claim 5, wherein said channel is a channel etched in a glass surface.

Claim 7 (Previously presented): The method of claim 1, wherein said channel is a channel in a ceramic surface.

Claim 8 (Previously presented): The method of claim 1, wherein said channel is a channel in a plastic surface.

Claim 9 (Original): The method of claim 1, wherein said channel has a cross-sectional area that provides a Reynold's number (Re) of less than about 1.

Claim 10 (Currently amended): The method of claim 1, wherein said channel has a cross-sectional diameter of 100 μm or less.~~less than about 100 μm.~~

Claim 11 (Currently amended): The method of claim 1, wherein said channel has a cross-sectional width of 500 μm or less.~~less than about 500 μm.~~

Claim 12 (Currently amended): The method of claim 1, wherein said channel has a cross-sectional width of 100 μm or less.~~less than about 100 μm.~~

Claim 13 (Currently amended): The method of claim 1, wherein said channel further comprises a third binding partner specific for a third analyte attached to a wall of said channel~~two or more target analytes comprise at least three different analytes~~.

Claim 14 (Original): The method of claim 1, wherein said binding partners are selected from the group consisting of antibodies, binding proteins, and nucleic acids.

Claim 15 (Original): The method of claim 14, wherein said binding partners are nucleic acids.

Claim 16 (Original): The method of claim 1, wherein said passing a fluid comprises fluid flow induced by a pressure difference.

Claim 17 (Original): The method of claim 1, wherein said passing a fluid comprises electroosmotic fluid flow.

Claim 18 (Original): The method of claim 1, wherein said sample comprises a fluid selected from the group consisting of blood, plasma, serum, urine, oral fluid, cerebrospinal fluid, and lymph.

Claim 19 (Original): The method of claim 1, wherein said detecting comprises absorbance spectroscopy.

Claim 20 (Original): The method of claim 1, wherein said detecting comprises sinusoidal voltammetry.

Claim 21 (Original): The method of claim 1, wherein said analytes are nucleic acids and said detecting detects target analytes at a concentration of less than 1×10^{-9} M.